

IN THE CLAIMS:

1. (currently amended) An apparatus for use during arthroplasty for guiding the resection of a bone having a long axis, comprising:

anchoring means for anchoring the apparatus to the bone, said anchoring means oriented transversely to the long axis of the bone;

a ~~drill~~-guide coupled to said anchoring means; and

alignment means coupled to said anchoring means and said ~~drill~~-guide for locating said ~~drill~~-guide relative to the anchoring means, said alignment means providing three degrees of freedom, wherein said three degrees of freedom include two rotations and one translation.

2. (previously presented) The apparatus according to claim 1 wherein said alignment means is continuously adjustable.

3. (previously presented) The apparatus according to claim 1 wherein said anchoring means is a pin.

4. (previously presented) The apparatus according to claim 1 wherein said alignment means provides five degrees of freedom.

5. (cancelled)

6. (previously presented) The apparatus according to claim 1 wherein said three degrees of freedom include flexion-extension, varus-valgus, and proximal-distal.

7. (previously presented) The apparatus according to claim 4 wherein said five degrees of freedom include

flexion-extension, varus-valgus, proximal-distal, medial-lateral, and anterior-posterior.

8. (currently amended) The apparatus according to claim 1 wherein said ~~drill~~-guide includes means for attaching a computer navigation tracker.

9. (currently amended) The apparatus according to claim 1 wherein said ~~drill~~-guide includes a pair of arms having guide holes adapted to guide drilling into the epicondylar region of a femur.

10. (currently amended) The apparatus according to claim 9 wherein said ~~drill~~-guide includes a T-shaped component and said arms are adapted to be coupled to said T-shaped component.

11. (withdrawn) The apparatus according to claim 9 further comprising a cutting block adapted to be coupled to the holes drilled in the epicondylar region with the drill guide.

12. (withdrawn) The apparatus according to claim 11 wherein said cutting block has five surfaces for making five different cuts on the distal femur.

13. (withdrawn) The apparatus according to claim 11 further comprising a pair of diodes adapted to be mounted in the epicondylar region using the holes drilled with said drill guide, wherein said cutting block is adapted to ride over said diodes.

14. (currently amended) The apparatus according to claim 1 wherein said ~~drill~~-guide is adapted to guide the drilling of two holes in the distal femur.

15. (withdrawn) The apparatus according to claim 14 further comprising a cutting block having two pins adapted to fit into the holes drilled in the distal femur using the drill guide.

16. (withdrawn) The apparatus according to claim 15 wherein said cutting block has four guiding surfaces for making four different cuts on the distal femur..

17. (withdrawn) A method of resecting a bone during arthroplasty, said bone having a long axis, said method comprising the steps of:

- (a) anchoring an anchor to the bone in an orientation transverse to the long axis of the bone;
- (b) attaching a drill guide to the anchor;
- (c) aligning the drill guide relative to the bone in three degrees of freedom previously presented;
- (d) locking the drill guide in position; and
- (e) drilling the bone using the drill guide.

18. (withdrawn) A method according to claim 17 wherein said step of aligning includes moving the drill guide through a continuously adjustable range.

19. (withdrawn) A method according to claim 17 further comprising the steps of:

- (e) coupling a computer navigation tracker to the drill guide; and
- (f) using a computer navigation system to perform the step of aligning.

20. (withdrawn) A method according to claim 17 wherein said step of anchoring includes pinning to the bone.

21. (withdrawn) A method according to claim 17 wherein said three degrees of freedom include two rotations and one translation.

22. (withdrawn) A method according to claim 17 wherein said three degrees of freedom include flexion-extension, varus-valgus, and proximal-distal.

23. (withdrawn) A method according to claim 17 wherein said step of aligning includes aligning in five degrees of freedom.

24. (withdrawn) A method according to claim 23 wherein said five degrees of freedom include flexion-extension, varus-valgus, proximal-distal, medial-lateral, and anterior-posterior.

25. (withdrawn) A method according to claim 17 wherein said step of drilling includes drilling holes in the epicondylar region.

26. (withdrawn) A method according to claim 25 further comprising the step of attaching a cutting block to the epicondylar region.

27. (withdrawn) A method according to claim 26 further comprising the step of making five different cuts of the distal femur using the cutting block.

28. (withdrawn) A method according to claim 17 wherein said step of drilling includes drilling two holes in the distal surface of the femur.

29. (withdrawn) A method according to claim 28 further comprising the step of attaching a cutting block to the distal femur using the two holes drilled therein.

30. (withdrawn) A method according to claim 29 further comprising the step of making four different cuts of the distal femur using the cutting block.

31. (currently amended) An apparatus for use during arthroplasty for guiding the resection of a bone having a long axis, comprising:

anchoring means for anchoring the apparatus to the bone, said anchoring means oriented transversely to the long axis of the bone;

a ~~drill~~-guide coupled to said anchoring means;

alignment means for locating the ~~drill~~-guide relative to the anchoring means, said alignment means providing three degrees of freedom wherein said three degrees of freedom include two rotations and one translation; and

a computer navigation system optically coupled to the ~~drill~~ guide.

32. (previously presented) The apparatus according to claim 31 wherein said three degrees of freedom are infinitely variable.

33. (previously presented) The apparatus according to claim 31 wherein said alignment means provides five degrees of freedom.

34. (previously presented) The apparatus according to claim 33 wherein said five degrees of freedom include flexion-extension, varus-valgus, proximal-distal, medial-lateral, and anterior-posterior.

35. (previously presented) The apparatus according to claim 31 wherein said anchoring means is a pin.

36. (previously presented) The apparatus according to claim 31 wherein said three degrees of freedom include flexion-extension, varus-valgus, and proximal-distal.

37. (cancelled)

38. (currently amended) The apparatus according to claim 31 wherein said ~~drill~~ computer navigation system further comprises a tracker and said guide includes means for attaching a computer navigationsaid tracker.

39. (withdrawn) The apparatus according to claim 31 further comprising a cutting block adapted to be coupled to the distal femur using holes drilled with said drill guide.

40. (withdrawn) The apparatus according to claim 39 wherein said cutting block has four guiding surfaces for making four different cuts in the distal femur.

41. (withdrawn) The apparatus according to claim 39 wherein said cutting block has five guiding surfaces for making five different cuts in the distal femur.

42. (currently amended) The apparatus according to claim 31 further comprising a ~~drill~~-guide bushing defining two spaced apart ~~drill~~-guide holes, said ~~drill~~-guide bushing having an orthogonal stem for coupling to an alignment device and a coupling for coupling a tracker to the bushing.

43. (currently amended) A set of tools for guiding the resection of a bone during arthroplasty, said set of tools comprising:

a ~~drill~~-guide bushing defining two spaced apart ~~drill~~-guide holes, said ~~drill~~-guide bushing having an orthogonal stem for coupling to an alignment device and a coupling for coupling a tracker to the bushing; and

an alignment device having at least three degrees of freedom wherein two are rotational and one is translational, said alignment device being adapted to couple to said stem and couple to an anchoring device.

44. (currently amended) The set of tools according to claim 43 wherein said ~~drill~~-guide is adapted to guide the drilling of holes in the distal femur.

45. (previously presented) The set of tools according to claim 43 wherein said alignment device has five degrees of freedom.

46. (currently amended) The set of tools according to claim 43 wherein said ~~drill~~-guide bushing includes a medial ~~drill~~-guide bushing and a lateral ~~drill~~-guide bushing, said medial ~~drill~~-guide bushing defining two spaced apart holes for drilling into the medial epicondylar region, and said lateral ~~drill~~-guide bushing defining two spaced apart holes for drilling into the lateral epicondylar region.

47. (previously presented) The apparatus of claim 1 wherein said anchoring means is oriented substantially parallel to the sagittal plane.

48. (withdrawn) The method of claim 17 wherein the orientation of the anchor is substantially parallel to the sagittal plane.

49. (previously presented) The apparatus of claim 31 wherein said anchoring means is oriented substantially parallel to the sagittal plane.

50. (currently amended) The apparatus according to claim 1 further comprising a ~~drill~~-guide bushing defining two spaced apart ~~drill~~-guide holes, said ~~drill~~-guide bushing having an orthogonal stem for coupling to an alignment device and a coupling for coupling a tracker to the bushing.

51. (new) An apparatus for use during arthroplasty for guiding the resection of a bone having a long axis, comprising:

anchoring means for anchoring the apparatus to the bone, said anchoring means oriented transversely to the long axis of the bone;

a guide coupled to said anchoring means; and

alignment means coupled to said anchoring means and said guide for locating said guide relative to the anchoring means, said alignment means providing five degrees of freedom.

52. (new) The apparatus according to claim 51 wherein said alignment means is continuously adjustable.

53. (new) The apparatus according to claim 51 wherein said

anchoring means is a pin.

54. (new) The apparatus according to claim 51 wherein said five degrees of freedom include two rotations and one translation.

55. (new) The apparatus according to claim 51 wherein said five degrees of freedom include flexion-extension, varus-valgus, proximal-distal, medial-lateral, and anterior-posterior.

56. (new) The apparatus according to claim 51 wherein said guide includes means for attaching a computer navigation tracker.

57. (new) The apparatus according to claim 51 wherein said guide includes a pair of arms having guide holes adapted to guide drilling into the epicondylar region of a femur.

58. (new) The apparatus according to claim 57 wherein said guide includes a T-shaped component and said arms are adapted to be coupled to said T-shaped component.

59. (new) The apparatus according to claim 51 wherein said guide is adapted to guide the drilling of two holes in the distal femur.

60. (new) The apparatus of claim 51 wherein said anchoring means is oriented substantially parallel to the sagittal plane.

61. (new) The apparatus according to claim 51 further comprising a guide bushing defining two spaced apart guide holes, said guide bushing having an orthogonal stem for coupling to an alignment device and a coupling for coupling a tracker to

the bushing.

62. (new) An apparatus for use during arthroplasty for guiding the resection of a bone having a long axis, comprising:

anchoring means for anchoring the apparatus to the bone, said anchoring means oriented transversely to the long axis of the bone;

a guide coupled to said anchoring means;

alignment means for locating the guide relative to the anchoring means, said alignment means providing five degrees of freedom; and

a computer navigation system optically coupled to the guide.

63. (new) The apparatus according to claim 62 wherein said five degrees of freedom are infinitely variable.

64. (new) The apparatus according to claim 62 wherein said five degrees of freedom include flexion-extension, varus-valgus, proximal-distal, medial-lateral, and anterior-posterior.

65. (new) The apparatus according to claim 62 wherein said anchoring means is a pin.

66. (new) The apparatus according to claim 62 wherein said five degrees of freedom include two rotations and one translation.

67. (new) The apparatus according to claim 62 wherein said computer navigation system further comprises a tracker, and said guide includes means for attaching said tracker.

68. (new) The apparatus according to claim 62 further

comprising a guide bushing defining two spaced apart guide holes, said guide bushing having an orthogonal stem for coupling to an alignment device and a coupling for coupling a tracker to the bushing.

69. (new) The apparatus of claim 62 wherein said anchoring means is oriented substantially parallel to the sagittal plane.

70. (new) A set of tools for guiding the resection of a bone during arthroplasty, said set of tools comprising:

a guide bushing defining two spaced apart guide holes, said guide bushing having an orthogonal stem for coupling to an alignment device and a coupling for coupling a tracker to the bushing; and

an alignment device having five degrees of freedom, said alignment device being adapted to couple to said stem and couple to an anchoring device.

71. (new) The set of tools according to claim 70 wherein said guide is adapted to guide the drilling of holes in the distal femur.

72. (new) The set of tools according to claim 70 wherein said guide bushing includes a medial guide bushing and a lateral guide bushing, said medial guide bushing defining two spaced apart holes for drilling into the medial epicondylar region, and said lateral guide bushing defining two spaced apart holes for drilling into the lateral epicondylar region.